

①

$$\int \sin^2 x \, dx$$

Hint! use  
double angle  
identities for both

②

$$\int \cos^2 x \, dx$$

$$\begin{aligned}\int \sin^2 x dx &= \int \frac{1 - \cos 2x}{2} dx = \int \left( \frac{1}{2} - \frac{\cos 2x}{2} \right) dx \\ &= \frac{1}{2}x - \frac{\sin 2x}{4} + C\end{aligned}$$

$$\begin{aligned}\int \cos^2 x dx &= \int \frac{1 + \cos 2x}{2} dx = \int \left( \frac{1}{2} + \frac{\cos 2x}{2} \right) dx \\ &= \frac{x}{2} + \frac{\sin 2x}{4} + C\end{aligned}$$

HW

- Finish the worksheet, exploration 50 & 51.
- Read 7.3